

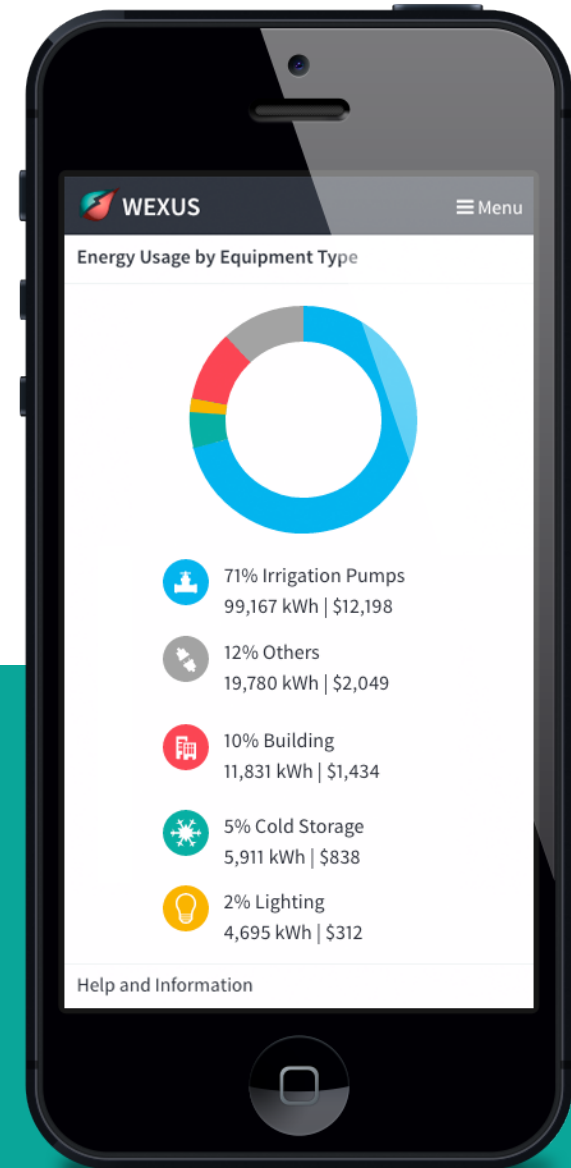


ENERGY EFFICIENCY PLATFORM FOR AG


## PRESENTATION FOR:

California Energy Commission  
EPIC Symposium, EE in Ag & Water Sectors  
Folsom, CA

December 3rd, 2015



# AGENDA

- 
- Introductions: Roots, People, History
  - The Problem
  - The Project: Summary, Partners & Goals
  - Product Overview: How It Works
  - Schedule & Progress
  - Questions

# OUR ROOTS ARE IN ENERGY

**30 years combined energy  
and ag experience**

We know energy data, the smart grid,  
and how to make it work for you.



E&J Gallo Winery



CHRIS  
TERRELL



CHRIS  
VINES



PETER  
SHERMAN



BRIAN  
HOGAN, PHD



MARK  
HABERMAN



CHRIS  
EIGNER



SASHA  
PROKHOROVA

# OUR HISTORY

## Spring 2014

Company formed

## Spring 2015

Data analysis & reporting

CEC grant awarded

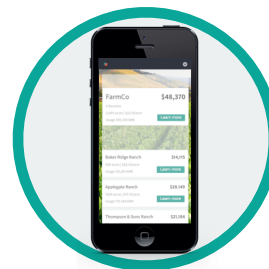
## June 2015

CEC grant project kicked off with the state

## Fall 2014

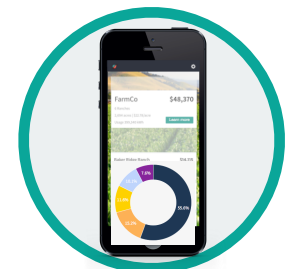
User interviews & testing

## May 2015



Product v1

## Nov 2015



Product v2  
More Features  
More Tools

# “What can I do to lower my energy bills?”

You can't manage what you don't measure.

## Problem #1: Growers currently lack actionable data

- 90% of energy monitoring is on paper via utility bills
- Many growers lack the data to make informed decisions down to the meter or specific piece of equipment
- Utility bills and websites can be confusing & don't show you ag-specific metrics

## Problem #2: Growers are currently working with “unconnected” equipment

- Limited mobile access and month-old data
- Older, analog meters can require costly labor hours to install, track & manage costs & usage



	A	B	C	D	E	F	G	H
3	Account Number	351056284						
4	Service	351056336						
5								
6	TYPE	DATE	START TIME	END TIME	USAGE	UNITS	COST	NOTES
7	Electric usage	11/26/14	0:00	0:59	1.82	KWh	\$0.32	
8	Electric usage	11/26/14	1:00	1:59	1.75	KWh	\$0.31	
					1.83	KWh	\$0.32	
					1.82	KWh	\$0.32	
					1.83	KWh	\$0.32	
					1.87	KWh	\$0.33	
					2.27	KWh	\$0.40	
					1.94	KWh	\$0.34	
					1.85	KWh	\$0.33	
					1.83	KWh	\$0.32	
					2	KWh	\$0.35	
					2.47	KWh	\$0.43	
					4.03	KWh	\$0.71	
					2.51	KWh	\$0.66	
					1.01	KWh	\$0.27	
					0.94	KWh	\$0.25	
					0.99	KWh	\$0.26	
					1.48	KWh	\$0.39	
					1.45	KWh	\$0.38	
					1.82	KWh	\$0.48	
					2.75	KWh	\$0.73	
					2.59	KWh	\$0.69	
					2.28	KWh	\$0.60	
					2.04	KWh	\$0.54	
					2.02	KWh	\$0.53	
					1.82	KWh	\$0.48	
					1.86	KWh	\$0.49	
					1.86	KWh	\$0.49	



# THE PROJECT: SUMMARY

**Sponsor:** California Energy Commission

**Program:** Electric Program Investment Charge (EPIC)

**Group & Funding:** Bringing Energy Efficiency Solutions to California's Industrial, Agriculture and Water Sectors, \$27.3m

**Project Title:** Wexus Energy & Water Management Mobile Software for the Agricultural Industry

**Agreement Number:** EPC-14-070

**Grant Award:** \$4,000,000

**Co-funded Amount:** \$1,000,000

**Project Term:** 6/30/2015 to 3/29/2019

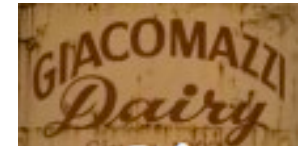


**CALIFORNIA**  
**ENERGY COMMISSION**

# THE PROJECT: PARTNERS

## Partner Sites & Locations:

- Rio Farms, King City CA
- Ramco Enterprises, Salinas CA
- Jackson Family Wines, Soledad CA
- Giacomazzi Dairy, Hanford CA



## Subcontractors

- Polaris Energy Services, Visalia CA
- Center for Water-Energy Efficiency (CWEE), Davis CA



# THE PROJECT: GOALS

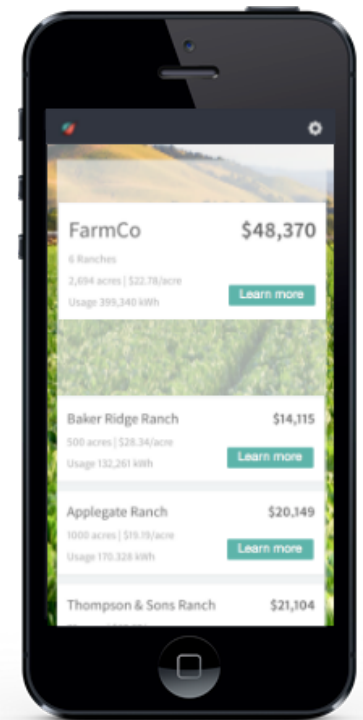
## 1. Engage ag partner sites in CA IOU territories & identify EE measures

- Reduce peak energy usage
- Promote greater electric grid reliability
- Promote lowered energy costs for farms (targeting reductions between 5-10% from baseline)

## 2. Provide wider proof of concept & use cases for scaling Wexus software platform throughout IOU regions

- Analyze utility billing & meter data, water usage data
- Continued ag partner site feedback

## 3. Train partner sites in use of Wexus mobile platform to quantify actual energy savings measures





# WEXUS CAN HELP YOU REDUCE ENERGY COSTS

Save up to **\$XXk/year** for less than **x%** of your annual energy costs.

## Put your data to work

- Understand your equipment usage down to the meter
- Know what's driving your costs & usage trends, year-over-year
- Find inefficiencies & take action to eliminate them

## Make informed decisions

- Wexus tools recommend better energy rates
- Know how much peak energy usage is costing you across the day
- Pull data on your smartphone, tablet or desktop



# HOW DOES IT WORK?

## Data

## Back End + Analytics

## Front End

## Engagement



Farm site data  
(names, acreage,  
utility accounts, equipment)



Utility meter interval data



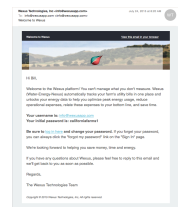
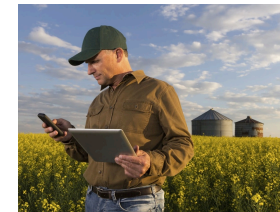
Polaris near real time meter  
data



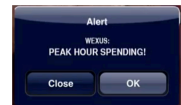
Utility billing data



Water flowmeter, controls +  
interval data



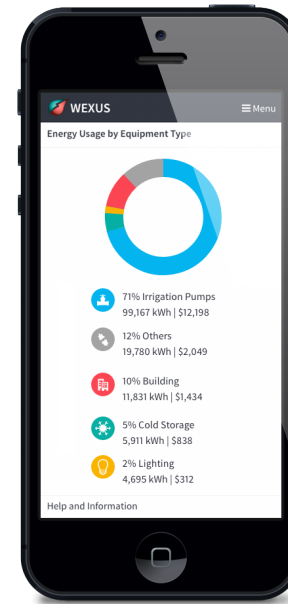
## Reports



## Alerts



Remote  
pump control



# POLARIS EQUIPMENT: REMOTELY MONITOR & CONTROL IRRIGATION PUMPS



## Demand Response

- Volunteer to reduce energy usage during peak events
- Earn cash incentives averaging \$5,000/yr/service point
- Earn up to \$20,000 in equipment to remotely monitor & control irrigation pumps
- Avoid peak demand charges of up to \$10,000/service point

# POLARIS EQUIPMENT: REMOTELY MONITOR & CONTROL IRRIGATION PUMPS

## Demand management

- Polaris devices shut off electric loads during peak demand events (1-4 hours max)
- Reduces manual workloads with real automation
- Energy usage tracking in near-real time (water usage also available)

## Estimated annual demand response revenue

- Average \$5,000 per year per service point/pump



# SCHEDULE & PROGRESS

6 months

July –  
Dec 2015

6 months

Dec 2015–  
June 2016

24 months

June 2016–  
July 2018

8 months

Jul 2018–  
Mar 2019

## Tasks 1&2

Kickoff meetings &  
site visits

Hardware  
installations

CPUC forms

Data access

Create accounts

User interviews &  
testing

## Tasks 3&4

Site visits as necessary

M&V

User interviews & testing

Data integration

Energy analysis & reports

Alerts

Training & webinars

## Tasks 4&5

Site visits as necessary

M&V

Features & Optimization

Data integration

Energy analysis & reports

Alerts

Training & webinars

## Tasks 6-8

Project summary &  
whitepapers

Production readiness  
plan







ENERGY EFFICIENCY PLATFORM FOR AG

THANK YOU

Questions?

Wexus Technologies, Inc.  
[info@wexusapp.com](mailto:info@wexusapp.com)  
415-429-6038

535 Mission St, 14<sup>th</sup> Floor  
San Francisco CA 94105

